ACCESSION NR: AP4011731

the absorption cross section of recombination radiation because of electron transitions with zinc atoms in the conduction band of germanium should be on the order of 10^{-18} cm^2. At zinc concentrations of about 10^{16} cm^{-3} this makes the coefficient of "useful" absorption on the order of 10^{-2} cm^{-1}. Thus, the absorption at free electrons, the concentration of which (in this experiment) exceeds 10^{16} cm^{-3}, leads to a large absorption coefficient. Therefore, the "useful" absorption of recombination radiation in zinc-doped n-type germanium should not prevail. "In conclusion, the authors express their thanks to Professor S. G. Kalashnikov for discussing the results of this work and to V. G. Alekseyeva for preparing the zinc-doped germanium samples." Orig. art. has: 2 figures, 1 table, and 1 formula.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR, Moscow (Institute of Radio Engineering and Electronics AN SSSR)

SUBMITTED: 12Jun63 DATE ACQ: 14Feb64 ENCL: 01

SUB CODE: PH NO REF SOV: 003 OTHER: 007

Card 2/2

L 21797-65 EWT(m)/T/EWP(t)/EWP(b) SSD(c)/SSD/AFWL/ASD(a)-5/AS(mp)-2/ESD(gs)/ESD(t)/IJP(c) JD

ACCESSION NR: AP5000662 S/0181/64/006/012/3631/3635

B

AUTHOR: Karpova, I. V.; Pokrovskiy, Ya. Ye.

TITLE: Radiative capture of carriers by neutral indium and antimony atoms in germanium 27 27 27

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3631-3635

TOPIC TAGS: radiative capture, carrier capture, indium, antimony, germanium, recombination radiation, photoconductivity, carrier density

ABSTRACT: A study was made of the recombination radiation and the steady-state photoconductivity of n-type germanium containing indium and p-type germanium containing antimony. Germanium single crystals were doped during growth from the melt. Antimony was introduced into the p-type samples in concentrations of $\sim 10^{15}$ cm^{-3} and indium in concentrations of $\sim 2 \times 10^{17}$ cm^{-3}. The n-type samples contained $\sim 2 \times 10^{17}$ cm^{-3} of antimony and 5×10^{14} -- 2×10^{16} cm^{-3} of indium. The majority carrier density was independent of temperature, and the degeneracy began below 25K for n-type and below 40K

Card 1/2

L 21797-65
ACCESSION NR: AP5000662

for p-type samples. The carrier lifetime τ_{pc} was measured between 5 and 300K by the steady-state photoconductivity method,and hence the coefficients for hole and electron capture by neutral In and Sb atoms were deduced. It was found that the coefficients for electron capture by neutral indium atoms and for hole capture by neutral antimony atoms were close to 5×10^{-15} cm^3/sec at 7K and depended weakly on temperature. The impurity recombination radiation was investigated and the spectrum for an n-type sample at 5K is given. Calculations based on the assumption that each carrier capture act (electrons by neutral indium atoms and holes by neutral antimony atoms) was accompanied by the emission of one photon were in agreement with the recombination radiation data, confirming that the carrier capture coefficients quoted above were governed by radiative transitions. "The authors thank Professor S. G. Kalashnikov for his interest and discussion of the results." Orig. art. has: 3 figures, 1 table, and 3 formulas.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR, Moscow (Radio Engineering and Electronics Institute, AN SSSR)

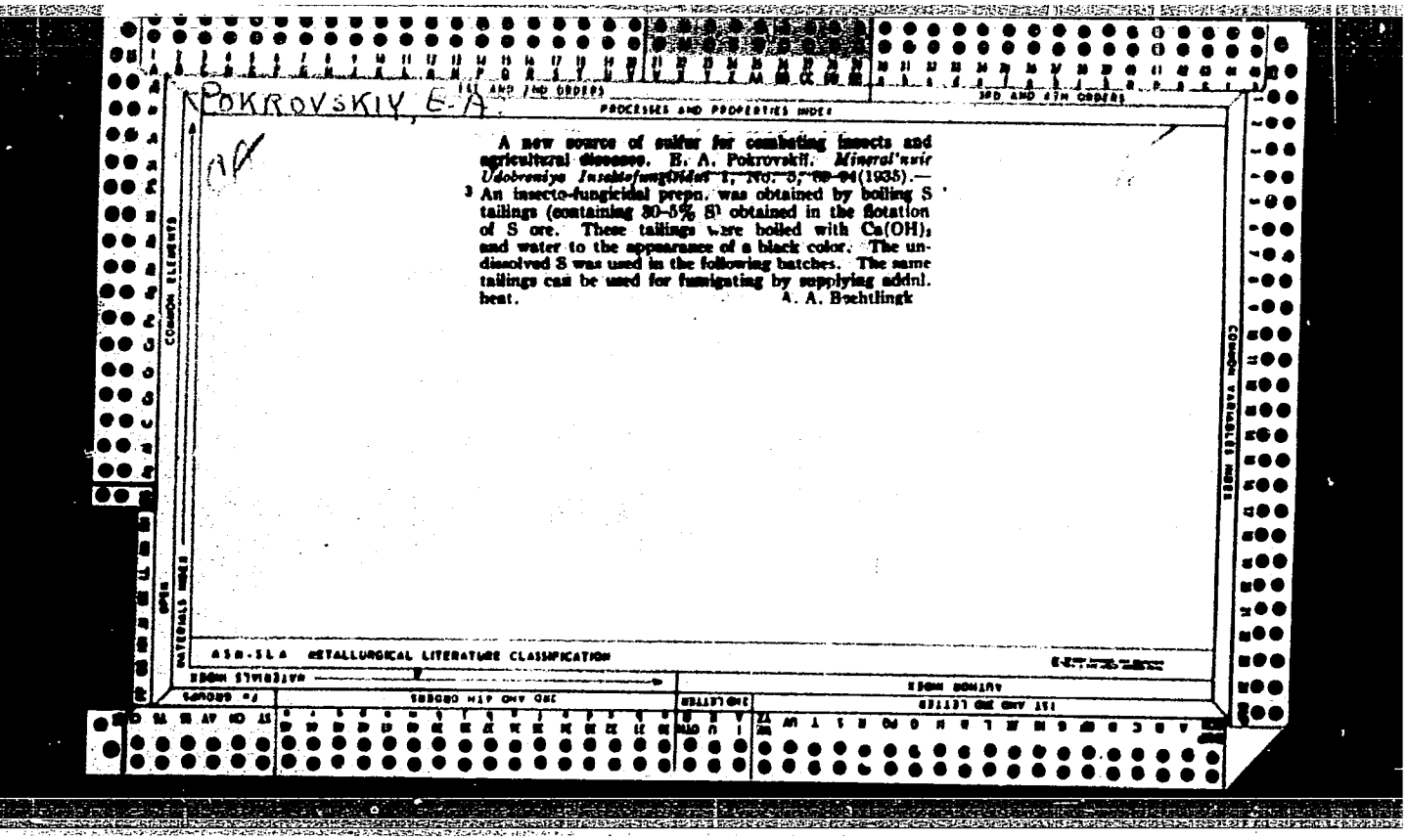
SUBMITTED: 03Apr64 ENCL: 00 SUB CODE: SS, NP

Card 2/2 NR REF SOV: 005 OTHER: 004 ATD PRESS: 3166

POKROVSKIY, Ye. A. Sci Res Inst of Fertilizers and Insectofungicides (NIUIF)

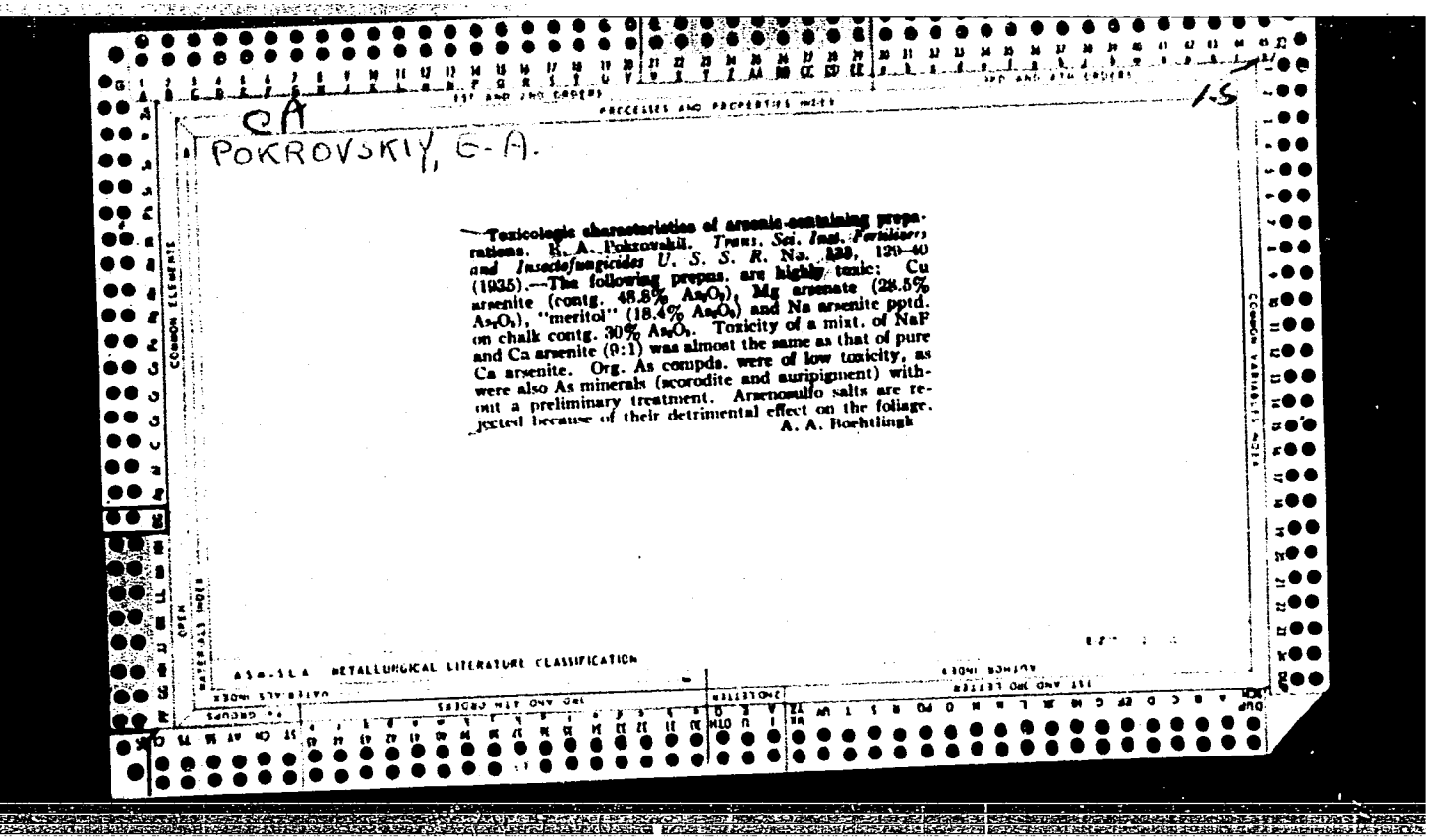
"Toxicologic Characteristics of Arsenic-containing Preparations"

SOURCE: Trans. Sci Inst Fertilizers and Insectofungicides USSR, No 123, pp 129-40, 1935



POKROVSKIY, E.A.

A new source of sulfur for combating insects and agricultural diseases. E. A. Pokrovskii. *Mineral'nye Udobreniya Insektofungitsidy* 1, No. 3, 89–94 (1935).—An insecto-fungicidal prepn. was obtained by boiling S tailings (containing 30–5% S) obtained in the flotation of S ore. These tailings were boiled with $Ca(OH)_2$ and water to the appearance of a black color. The undissolved S was used in the following batches. The same tailings can be used for fumigating by supplying addnl. heat. A. A. Boehtlingk



QA

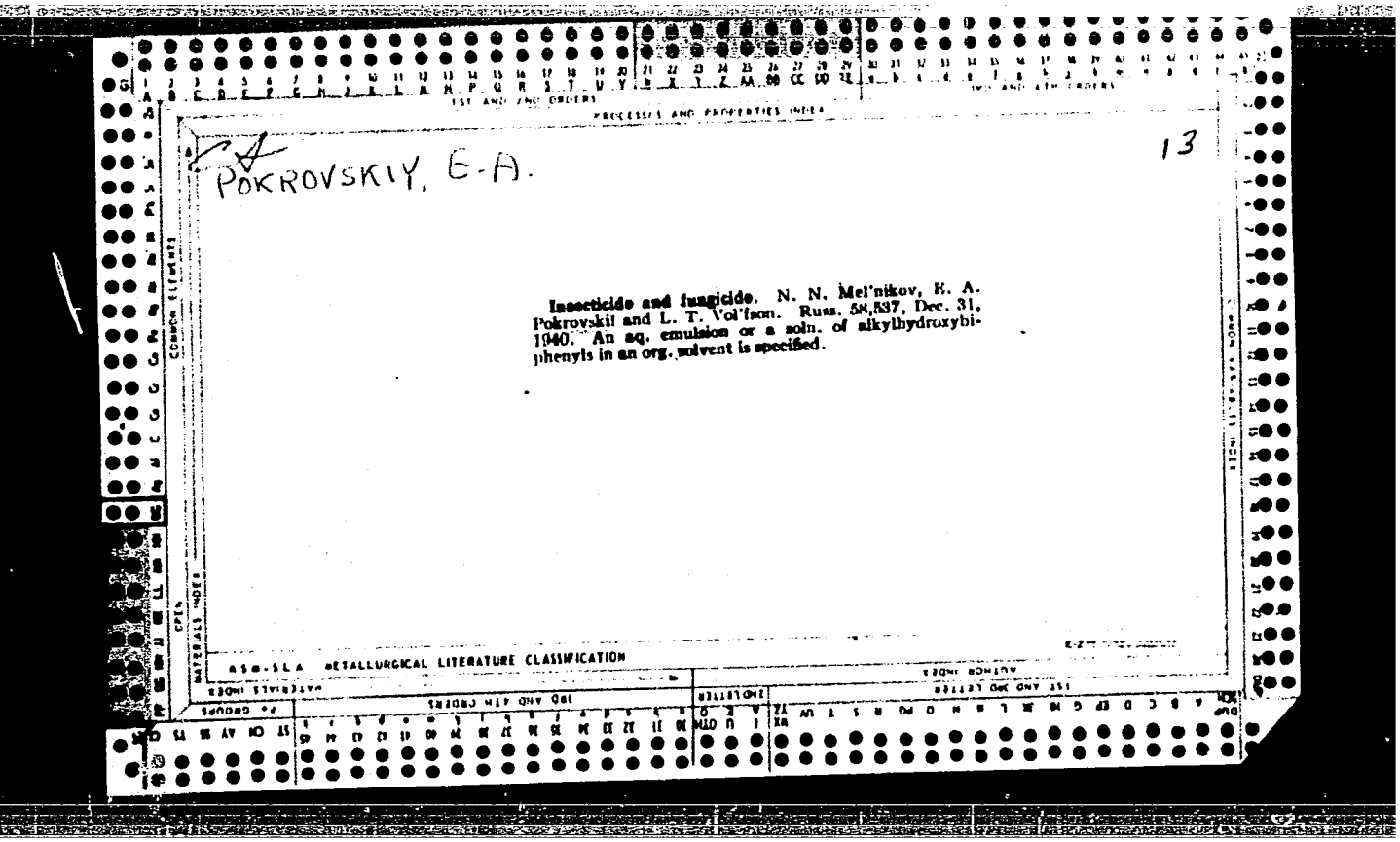
POKROVSKIY, G.A.

1.5

Toxicologic characteristics of arsenic-containing preparations. G. A. Pokrovskii. *Trans. Sci. Inst. Fertilizers and Insecticides U. S. S. R.* No. 139, 120–40 (1935).—The following prepns. are highly toxic: Cu arsenite (contg. 48.8% As_2O_3), Mg arsenate (28.5% As_2O_3), "meritol" (18.4% As_2O_3) and Na arsenite pptd. on chalk contg. 30% As_2O_3. Toxicity of a mixt. of NaF and Ca arsenite (9:1) was almost the same as that of pure Ca arsenite. Org. As compds. were of low toxicity, as were also As minerals (scorodite and auripigment) without a preliminary treatment. Arsenosulfo salts are rejected because of their detrimental effect on the foliage.

A. A. Boehtlingk

A54-51A METALLURGICAL LITERATURE CLASSIFICATION



POKROVSKIY, E-A.

13

Insecticide and fungicide. N. N. Mel'nikov, E. A. Pokrovskii and L. T. Vol'fson. Russ. 58,537, Dec. 31, 1940. An aq. emulsion or a soln. of alkylhydroxybiphenyls in an org. solvent is specified.

POKROVSKIY, Ye. A.

Pokrovskiy, Ye. A. "Concentrates of emulsions with DDT and GKhTsG (hexachlorocyclohexane?)", (Preparations for the fight against plant pests), Sad i ogorod, 1949, No. 5, p. 22-23.

SO: U-4630, 16 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 23, 1949).

POKROVSKIY, Ye. A.

MEL'NIKOV, N.N.; NABOKOV, V.A.; POKROVSKIY, Ye.A.; ZITSER, A.I., redaktor; YEVDOKIMOVA, Z.N., tekhnicheskiy redaktor.

[DDT; properties and use] DDT; svoistva i primenenie. Moskva, Gos. nauchno-tekhn. izd-vo khimicheskoi lit-ry, 1954. 203 p. (MLRA 8:1)
(DDT (Insecticide))

POKROVSKIY, Ye.A.

Insecticidal mineral-oil emulsions with DDT and hexachlorocyclohexane added. [Trudy] NIUIF no.156:154-174 '55. (MLRA 9:10)

(Emulsions) (DDT (Insecticide)) (Benzene hexachloride)

POKROVSKIY, E.A.

USSR / General and Specialized Zoology - Insects

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 23275

Author : Pokrovskiy, E.A.

Inst : Not Given

Title : A Concentrated Emulsion of Anthracene Oil (KEAM) -- a Preparation for Controlling Pests in the Wintering Stage of Their Development.

Orig Pub : Sb. rabot Nauch. in-ta po udobreniyam i insektofungitsidam, 1955, No 156, 174-186

Abstract : The history of utilizing carbonaceous oils as insecticides abroad and in the USSR is given. The most effective ovicide was found to be KEAM, which contains 56-60% anthracene oil with a boiling point of 210-360°, 6% of sulfite-alcohol wash (calculated as dry substance), and 34-38% of water. KEAM emulsifies in water of any hardness and at any temperature; it is stable when stored at temperatures from -35 to 40°. According to data of NIUIF [Scientific Institute of Fertilizers, Insectices and Fungicides], the total destruction of apple suckers was caused only by an 8% emulsion of KEAM and a 2% emulsion with addition of 0.2% dinitroorthocresol, and a total

Ca

Card 1/2

POKROVSKIY, Ya. A.

Insecticidal DDT and hexachloro-cyclohexane compounds to be used in aqueous suspensions. [Trudy] NIUIF no.156:201-209 '55.
(MLRA 9:10)

(DDT (Insecticide)) (Benzene hexachloride)

POKROVSKIY, YE. N.

USSR / General and Specialized Zoology - Insects 0-7

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 23180

Author : Pokrovskiy, E.A., Bel'kevich, V.I.

Inst : Not Given

Title : Loss of Toxicity of DDT and BHC Preparations as Affected by Temperature and Light

Orig Pub : Sb. rabot Nauch. in-ta po udobreniyam i insectofungitsidam, 1955, No 156, 214-224

Abstract : Reports on laboratory experiments on total isomers of DDT and BHC of all forms (7.5 and 15 mg/m^2). The bioindicator -- rice weevil; the exposure -- 90 minutes. Petri dishes containing the preparations were held in the first series of experiments for 1, 4, 7, 10 and 15 days at 18-20° and were illuminated by diffused daylight; in the second series -- for the same period of time in a thermostat at 25, 30, 40 and 50° in darkness; and in the third series -- 3.5 and 10 hours irradiated by a mercury lamp at 23-24°. In the first series

Card : 1/3

(7.5 mg/m^2) the DDT toxicity over 15 days scarcely changed when in powder and suspension form; it was decreased by 60% in an emulsion. The toxicity of BHC in 10 days decreased in powder form by 20%; in 15 days -- by 50%; in 4 days in suspension form by 20% and in 10 days by 100%; in emulsion form for 4 days by 50%. In the second series, (7.5 mg/m^2), the DDT powder showed no change in toxicity in 15 days at 25°, at 30 - 40° it decreased by 30 - 40%; at 50° for 4, 10 and 15 days it decreased correspondingly by 40, 70 and 100%; in suspension it decreased in 7 days at 25° by 60%, at 30° for 4 days, by 50%, and for 10 days by 100%; at 40° for 1 day, by 40%, and for 4 days by 100%; at 50° for less than 4 days, by 100%; in emulsion it decreased at 25-40° in 1 day by 30-50%, in 4 days, by 70% and in 7 days by 100%; at 50° in 1 day, by 100%. BHC toxicity in powder and suspension form decreased in 1 day at 25-30° by 50% and at 40-50° by 100%; in emulsion it lost potency in less than 24 hours even at 25°. In both series at 15 mg/m^2 the decomposition of the preparations was slower. In the third series (15 mg/m^2) the DDT toxicity decreased in powder form by 20% in 3 hours, by 50% in 5 hours and by

POLOVSKIY [illegible], Ye. A.

"New Organophosphorous Insecticides with Intra-Plant Activity" paper presented at Nn First Conference on Phosphorous Compounds, Kazan, 8-10 Dec 56

SO: B-3,084,241

POKROVSKIY, Ye. A.; SEDYKH, A. S. (NIUIF im. Ya. V. Samoylov, Moscow)

"New Organophosphorus Preparation -- Insecticides of Systemic Plant Action" (Noviye fosfororganicheskiye preparaty -- insektitsidy vnutriratitel'nogo deystviya)

Chemistry and Uses of Organophosphorous Compounds
(Khimiya i primeneniye fosfororganicheskikh soyedneniy),
Trudy of First Conference, 8-10 December 1955, Kazan,
pp. Published by Kazan Affil. AS USSR, 1957
438-449

POKROVSKIY E. A.

USSR/Special and General Zoology - Insects. 0-3

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, 69842

Author : E.A. Pokrovskiy
Title : Results of the Experimental Use of Esters of Thyopyrophosphoric Acid as Insecticides.

Orig Pub : Kazansk. fil. AN SSSR, 1956, vyp. 2, 37-56

Abstract : Experiments carried out on Aulacorthum pelargonii and the barn weevil established that preparations based on esters of thio- and dithiopyrophosphoric acids -- tetraethylmonothiopyrophosphate (1) and tetraethydithiopyrophosphate (11)- are more toxic than the esters of selenium and diseleniumpyrophosphoric acids (tetraethylmonpseleniumpyrophosphate and tetraethyldiseleniumpyrophosphate). 1 and 11 differed on by slightly in toxicity, but 11 surpasses 1 in stability in dusts and in aqueous emulsions. 0.005 -0.2% emulsions are highly effective against collembola (Bortiella signata), Comstock scale insects, citrus,

Card 1/2

USSR / General and Specialized Zoology. Insects. P
Chemical Means for the Control of Harmful Insects and Acarids.

Abs Jour: Ref Zhur-Biol., No 13, 1958, 59201.

Author : Pokrovskiy, Ye. A.
Inst : The All-Union Institute for the Protection of Plants.
Title : Evaluation of Octamethyltetramidepyrophosphate as an Insecticide of Intraplant Action.

Orig Pub: Tr. Vses. in-ta sashchtity rast., 1956, vyp. 7, 61-68.

Abstract: The effectiveness of octamethyl (O) depends on the species of the pest and on plant, climatic and, possibly other conditions. The protective action of a single O treatment lasts from 2-3 days to two seasons (the poplar, chestnut and oak aphids). O is not effective against cater-

Card 1/2

USSR/General and Special Zoology - Insects. P.

Abs Jour : Ref Zhur - Biol., No 7, 1958, 30567

Author : Pokrovskiy, E.A., Sedykh, A.S.
Inst : -
Title : New Organic Phosphorus Preparations -- Insecticides of Intraplant Action.

Orig Pub : V sb.: Khimiya i primeneniye Fosfororgan. soyedineniy. M., AN SSSR, 1957, 438-449.

Abstract : Seventy six preparations in a 0.25% concentration were tested in the laboratory on hydrangea against the cobweb tick. Acethyl-urea and ethyl-urethan were more effective than octamethyl; the KPAN preparations No 6 (triethyldimethylamidemonothiopyrophosphate), No 7 (tetramethyldiamiddiethyl), and No 8, 11, 13, were also effective. These seven preparations were tested under natural conditions in 0.5%, 0.1% and 0.25% concentrations against the red citrus tick. The preparations Nos 6, 7 and 8 caused

Card 1/2

POKROVSKIY, Ye. A.

Insecticides. N. N. Mel'nikov, K. D. Shvetsova-Shilovskaya, E. A. Pokrovskii, and A. S. Sedykh. U.S.S.R. 104,041, Jan. 25, 1957. Mixed esters of dithiophosphoric acid contg. a carbamide group in the aliphatic radical, and particularly compds. of the type $(RO)_2PSCH_2NCO_2Et$ and $(RO)_2PSCH_2N(Me)CO_2Et$ are used as insecticides.
M. Hoseh

P

USSR/General and Specialized Zoology - Insects. Harmful Insects and Acarids. Chemical Means in the Control of Harmful Insects and Acarids.

Abs Jour : Ref Zhur Biol., No 6, 1959, 25434

Author : Pokrovskiy, Ye.A., Sedykh, A.S.

Inst :

Title : Intraplantar Insecticide Properties of Acetylurea and Methylurethan Preparations.

Orig Pub : V. sb.: Organ insektofungitsidy i gerbitsidy, M., Goskhimizdat, 1958, 29-37

Abstract : Acetylurea (A), B-carbamido-carbomethyl-O-diethyl-dithiophosphate - a highly effective acaricide of systemic action, possesses a lasting protective and ovicide effectiveness in the control of acarids. Suspension of A is less effective than the emulsion of the concentrate of A and is harmless for plants (in a concentration of 0.03-0.1%). A further study of the 50% moistened A

Card 1/2

MEL'NIKOV, N.N.; MANDEL'BAUM, Ya.A.; SHVETSOVA, K.D.; BAKANOVA, Z.M.
LOMAKINA, V.I.; ZAKS, P.G.; MIL'SHTEYN, I.M.; POPOV, P.V.;
POKROVSKIY, Ye.A.; BOCHAROVA, L.P.; SEDYKH, A.S.; UKRAINETS, N.S.

Improved technology for producing thiophos, metaphos, chlorophos and other phosphorus organic insecticides and investigation of new insecticides and fungicides derived from the esters of phosphoric acids. [Trudy] NIUIF no.164:11-14 '59. (MIRA 15:5)
(Insecticides) (Fungicides)

BEZUGLYY, S.F.; LITVINOVA, A.F.; POKROVSKIY, Ye.A.

Physicochemical investigations of insecticidal emulsions and solutions with emulsifiers in order to improve the methods for preparing the above form of insecticides. [Trudy] NIUIF no.164: 29-31 '59. (MIRA 15:5)

(Insecticides)

BEZUGLYY, S.F.; SARISHVILI, I.G.; LUKANINA, V.S.; POKROVSKIY, Ye.A.; UNTERBERGER, V.K.

Investigation of the chemical stability of mineral oils and oil fractions and development of nonphytocidal emulsions based on them for controlling pests of citrus and other fruit cultures. [Trudy] NIUIF no.164:34-35 '59. (MIRA 15:5)
(Insecticides)

POKROVSKIY, Ye.A.; UNTERBERGER, V.K.; DENISKINA, G.P.

Measures for controlling the San Jose scale. Zashch. rast. ot vred. i bol. 5 no.1:27 Ja '60. (MIRA 14:6)
(San Jose scale)

POKROVSKIY, VE.A., TIKHEYEVA, N.N., TRACHENKO, A.V., ALEKSEYEVA, A.M.,

PETUKHOV, M.I., (USSR)

"Synthesis, Distribution and Accumulation of Creatine in Testes of Various Animals."

Report presented at the 5th Int'l. Biochemistry Congress, Moscow, 10-16 Aug 1961.

POKROVSKIY, Ye.A.

Modified method for direct determination of neutral fats. Vop. med. khim. 11 no.2:74-77 Mr-Ap '65. (MIRA 18:10)

1. Kafedra biologicheskoy khimii Kalininskogo gosudarstvennogo meditsinskogo instituta.

ACCESSION NR: AR4025762 S/0299/64/000/003/P059/P059

SOURCE: RZh. Biologiya, Abs. 3P390

AUTHOR: Pokrovskiy, Ye. A.

TITLE: Lipid composition of the testes of white rats and guinea pigs under normal conditions and in a state of post-irradiation atrophy

CITED SOURCE: Sb. Novy*ye danny*ye po biokhimii polovy*kh zhelez v norme i pri nekotory*kh patol. sostoyaniyakh (luchevy*ye povrezhdeniya i gipoksiya). Kalinin, Knigoizdat, 1963, 49-57

TOPIC TAGS: irradiation, testicular irradiation, radiation sickness, lipid metabolism, radiation atrophy, testicular atrophy, testicular lipid

TRANSLATION: The area of the right testis of rats was subjected to local X-irradiation with a single dose of 660 r with shielding of the left testis and of the remainder of the body. A second group of rats received chronic daily (except weekends) total body X-irradiation at a dose of 10 r for 1 min. for 4 months. The lower part of the abdomen of adult male guinea pigs was subjected to X-irradiation at a dose of 258 r for 10 min. Two months after acute irradiation, and after the last dose of chronic irradiation, determina-

Card 1/2

ACCESSION NR: AR4025762

tions were made of the lipid composition of the testes. Histological examination revealed radiation-induced atrophy of the testes in both rats and guinea pigs. The testicular weight was significantly lower, and the water content higher than in the controls. The phospholipid content (including plasmogens) of the irradiated rat testes was considerably lower than in controls, while the content of neutral fats and of other unidentifiable lipids was higher; the total content of structural lipids was higher. In the guinea pig testes, the neutral fat content was only about half that in controls (but 4 times as high as in rats); in these animals, the total absolute content of structural lipids was unchanged, while the relative content was increased (due to a sharp decrease in neutral fats). Chromatographic studies showed that the principal components of the testicular phosphatides were phosphatidylethanolamine, phosphatidylcholine, phosphatidylserine, sphingomyelin and phosphatidylinositol. There were no qualitative differences in the testicular phosphatide composition of control and experimental animals.

DATE ACQ: 27Feb64 SUB CODE: LS ENCL: 00

Card 2/2

ALEKSEYEVA, A.A., prof., otv. za vypusk; PETUKHOV, M.I., dots., zam. red.; POKROVSKIY, Ye.A., ass., red.; ALMAZOVA, Ye., tekhn. red.

[New data on the biochemistry of the sexual glands under normal conditions and in some pathological states (radiation lesions and hypoxia)] Novye dannye po biokhimii polovykh zhelez v norme i pri nekotorykh patologicheskikh sostoianiiakh (luchevye povrezhdeniia i gipoksiia). Kalinin, Kalininskoe knizhnoe izd-vo, 1963. 122 p. (MIRA 17:3)

1. Kalinin. Meditsinskiy intitut.

POKROVSKIY, Ye.A., kand.biolog.nauk

Mineral-oil emulsion No. 30-s. Zashch. rast. ot vred. i bol. 8 no.2:38-39 F '63. (MIRA 16:7)
(Spraying and dusting in agriculture)

POKROVSKOY Ye. A.

Country : USSR
Category: Human and Animal Morphology (Normal and Pathological). Nervous System.

S

Abs Jour: RZhBiol., No 2, 1959, No 7508

Author : Pokrovskoy, Ye. A.
Inst : Iz kafedry normal'noy anatomii (zav. deystvitel'nyy chlen AMN SSSR,)
Title : On the Topography of the Spinal Cord, Its Radices and Intervertebral Nodes in Cat

Orig Pub: Arkhiv anatomii, gistol. i embriologii, 1957, 34, No 4, 97-99

Abstract: On the basis of study of 5 cats, the points of exit of the segmental spinal nerves from the vertebral canal, the direction of the radices of cervical nerves, the relationship between the spinal segments of the thoracic and lumbar regions and

Card : 1/2

P[illegible], Ye. A.

ZHURAVCHENKO, A.N. and E.A. POKROVSKIY

Iz opyta letnykh ispytanii samoletov na shtopor. (Tekhnika vozdushnogo flota, 1940, no. 10-11, p. 64-70, diagrs.)

Title tr. : From test flight experience of spin.

TL 504.T4 1940

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955

POKROVSKIY, B.I.

Raman spectra of two silanes. M. V. Vol'kenshtein and B. I. Pokrovskii. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1953, 105 (Engl. translation).—See *C.A.* 47, 9254h. H. L. H.

VOL'KENSHTEYN, M.V.; POKROVSKIY, Ye.I.

POKROVSKIY, Ye.I.

[illegible] spectra of two silanes. Izvest. Akad. Nauk S.S.S.R., Otdel Khim. Nauk '53, p. 177. (MLRA 6:3)
(CA 47 no.13:6254 '53)

1. High Polymer Inst., Acad. Sci. U.S.S.R., Moscow.

POKROVSKIY, Ye. I.

"Investigation of the Structure of Low- and High-Molecular Hydrocarbons by the Method of Infrared Spectra." Cand Phys-Math Sci, Inst of High-Molecular Compounds, Acad Sci USSR, Leningrad, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

RUDAKOV, A.P.; BESSONOV, M.I.; KOTON, M.M.; POKROVSKIY, Ye.I.; FEDOROVA, Ye.F.

High-temperature isomeric transformations in polyimides. Dokl. AN SSSR 161 no.3:617-619 Mr '65. (MIRA 18:4)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR. 2. Chlen-korrespondent AN SSSR (for Koton).

POKROVSKIY, YE. I.

USSR/Physics - Spectral analysis

Card 1/1 Pub. 43 - 56/62

Authors : Nikitin, V. N., and Pokrovskiy, Ye. I.

Title : Infrared absorption spectra for the determination of crystallinity and melting points of polyethylene

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, 735-736, Nov-Dec 1954

Abstract : Data are presented regarding the thermal dependence of band intensities of infrared absorption spectra of polyethylene at temperatures ranging from 20 - 250°C. The measurements were carried out by means of a spectrometer with sodium chloride in role of prism. The method employed in determining the crystallinity of polyethylene is described. The results obtained are reviewed. Six references: 4 USA and 2 USSR (1949-1954). Graphs.

Institution : Acad. of Sc., USSR, Inst. of High Molecular Compounds

Submitted : .....

POKROVSKIY, Ye. I.

5

Determinations of the degree of crystallization and of the fusion temperature of polyethylene by the method of infrared absorption. V. N. Nikitin and E. I. Pokrovskii. *Doklady Akad. Nauk S.S.S.R.* 95, 109–10(1954).—The crystn. of polymers is indicated by the appearance of specific absorption lines in the infrared spectra (Stein and Sutherland, *C.A.* 47, 9775b). For polyethylene the temp. range from 20 to 250° was investigated, a spectrometer with NaCl prism was used. The samples were 0.01 cm. thick. The absorption line 730 cm.$^{-1}$ is particularly characteristic for the cryst. polyethylene, but its measurement is difficult because of the proximity of the 720-cm.$^{-1}$ line. Therefore the line 1308 cm.$^{-1}$ was preferred. It is much intensified during the transition of the crystal to the liquid state. The same line appears also in the fusion of the hydrocarbons $C_{18}H_{38}$, $C_{28}H_{58}$, $C_{36}H_{86}$, $C_{54}H_{110}$. The curve which shows the transmittance of the 1308-cm.$^{-1}$ line in polyethylene as a function of temp. shows a fusion interval of about 60°. With increasing temp. this interval steadily decreased to a const. value of 35% in agreement with previous dilatometric results. The detn. of the "crystallinity", C_k in %, below 110° is based on the Lambert-Beer law. The optical measurement eliminates the troublesome errors introduced by the detn. of the thickness of the sample, and that of an undefined mol. wt. For the lines 1308, 730, and 720 cm.$^{-1}$ the transmittance curves are S-shaped with the star and the end of the fusion process as inflection points. W. Eitel

Inst. Higher Molecular Compds. AS USSR

POKROVSKIY, Ye. I.

4

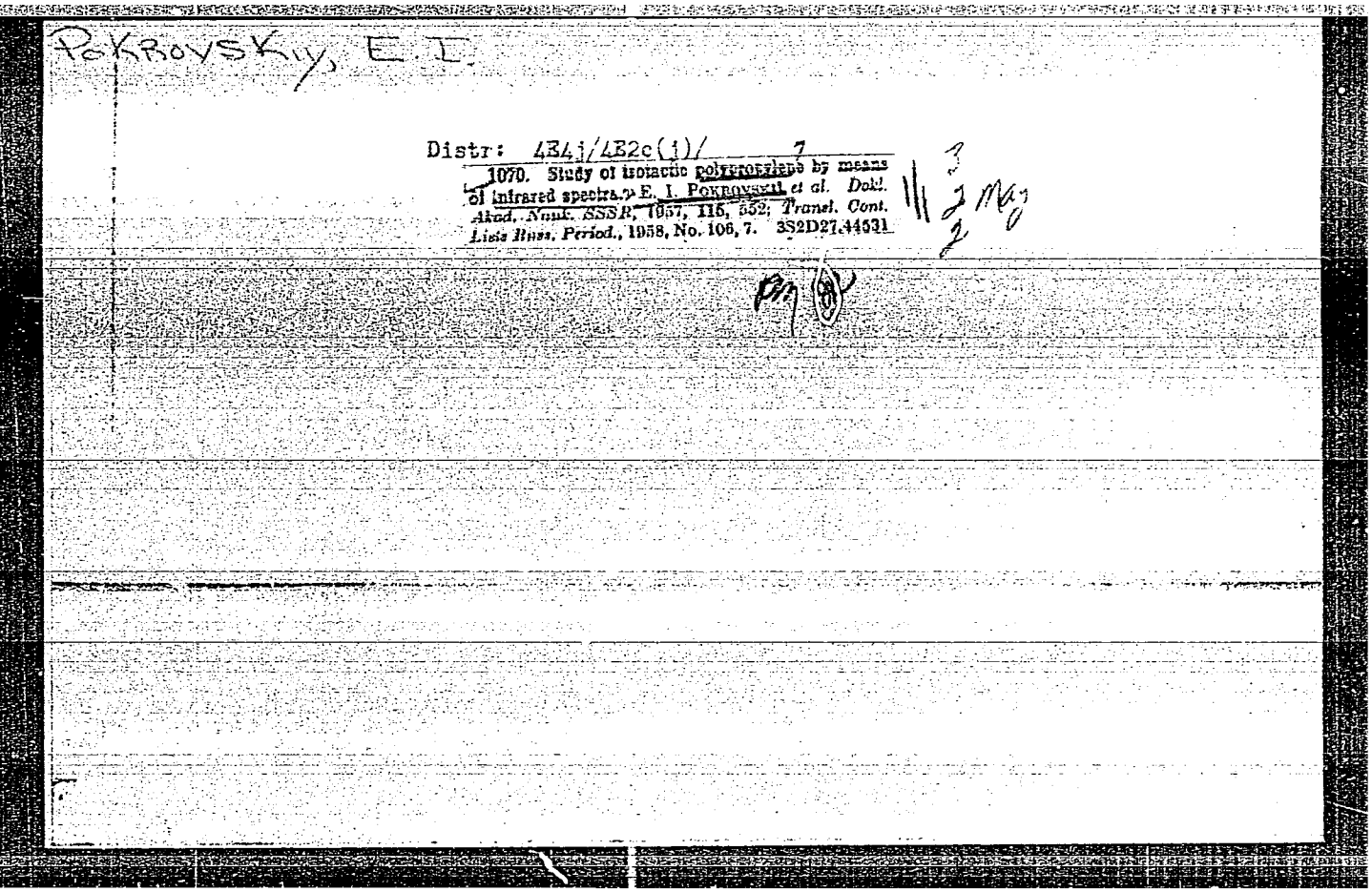
(2)

10820* Quantitative Analysis of Polyisoprene by Means of Infra-Red Spectra. (Russian.) E. I. Pokrovskij and M. V. Vol'kenshtein. *Doklady Akademii Nauk SSSR*, v. 95, no. 2, Mar. 11, 1954, p. 301-303.

Relative error in determination of coefficient of absorption does not exceed 0.3%. Graphs, tables. 1 ref.

MF 11-8-54

High Polymer Inst., AS USSR



POKROVSKIY, E. I.

Distr: 4E4j/4B2c(j)/ 7

1070. Study of isotactic polypropylene by means of infrared spectra. E. I. Pokrovskii et al. *Dokl. Akad. Nauk. SSSR*, 1957, 115, 552; *Transl. Cont. Lists Russ. Period.*, 1958, No. 106, 7. 3S2D27.44531

POKROVSKIY, Ye.I.

548.73 : 539.213

2833. INFRARED SPECTROSCOPIC STUDY OF CRYSTALLINITY OF CERTAIN POLYMERS. E.I.Pokrovskii and I.P.Kotova. Zh. tekh. Fiz., Vol. 26, No. 7, 1456-60 (1956). In Russian.

Absorption spectra of polytetrafluorethylene, polychlortrifluorethylene, polyethylene terephthalate, polyisobutylene, polystyrene, and polymethyl methacrylate were obtained in the range 430 to 4000 cm^{-1} at temperatures from 20°C to 409°C (or up to the polymer decomposition temperature). In polymers which vitrify there is no change in absorption spectra up to the temperature of vitrification and above that temperature the changes are very small. In polymers which crystallize there is a change in intensity of absorption bands at melting. It is possible to determine the degree of crystallinity of polymers from the absorption bands attributed to the amorphous state. J.Adam

Pokrovskiy, Ye. I.

AUTHORS Pokrovskiy, Ye. I., and Vol'kenshteyn, M.V. 20-3-36/59

TITLE A Study of Isotactic Polypropylene by Means of Infrared Spectra. (Issledovaniye izotakticheskogo polipropilena metodom infrakrasnykh spektrov).

PERIODICAL Doklady Akademii Nauk, 1957, Vol. 115, Nr 3, pp. 552 - 553 (USSR.).

ABSTRACT Specimens obtained from different methods were investigated in the form of membranes o'2 mm thick. Bands were found at 720, 730, 790, 810, 839, 935, 969, 992, 1050, 1108, 1170, 1376, 1460, 2850, 2924 and 2975 cm^{-1}. Only one of these bands 935 cm^{-1} diverges from the spectres mentioned by NATTA and his collaborators. This extremely soft band does not appear in all specimens. The occurrence of the bands 894 and 992 cm^{-1} is characteristic for the isotactic crystalline polymer. They are very soft, if the fraction is extracted with ether. When the polymer is heated to 140 - 150°C, the spectrum changes, so that the bands 810, 839, 894 and 992 cm^{-1} are softened. This proves, that the melting point T_{pl} of isotactic polypropylen is at about 160 - 170°C. Apparently the latter bands can be considered as bands of crystal state. From the curve of the dependency of the transmissivity at the band maximum 992 cm^{-1} the melting temperature of the polymer can be determined. The value of the degree of crystallization was found to be 75, 90 and 100% respectively in the case of three

Card 1/2

AUTHOR: Pokrovskiy, Ye.I. SOV/76-32-6-34/46

TITLE: Letters to the Editor (Pis'ma v redatksiyu)
The Quantitative Analysis of the Content of CH_2- and CH_3-Groups in Hydrocarbons According to Infrared Spectra (Kolichestvennyy analiz soderzhaniya CH_2- i CH_3-grupp v uglevodorodakh po infrakrasnym spektram)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 6, pp 1410-1412 (USSR)

ABSTRACT: The methods of determination of the above mentioned analysis employed at present have some disadvantages; numbering among them is that carbon tetrachloride is used as a solvent, in which some substances do not dissolve; the method according to L. I. Tarutina on the other hand (Ref 4) operates with a very weak absorption band asymmetry. A method is described which makes it possible to determine the number of CH_3- and CH_2 groups in solution and in liquid state as well as the ratio CH_3/CH_2 in films. The spectra were taken with a

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The Quantitative Analysis of the Content of CH_2- and CH_3-Groups in Hydrocarbons According to Infrared Spectra. Letters to the Editor

SOV/76-32-6-34/46

IKS-11 spectrometer using the absorption bands 2924 cm^{-1} for the CH_2-groups and 2957 cm^{-1} for the CH_3-groups. n-hexadecane was used as a standard. The author worked with contours of the absorption bands. Besides the determinations in the solutions of polyethylene and polypropylene the author carried out investigations of films or of layers of the same substances which were several μ thick. Various samples of polyethylene, polyisobutylene, polypropylene, and of copolymers of ethylene with isobutylene were investigated; the results obtained are mentioned. The reproducibility of the method is 1-2% as mentioned in this paper and the accuracy of analysis is said to be 1,5%. Finally the author thanks B. A. Krenzel and N. I. Nikolayev for supplying various samples. There are 3 figures and 5 references, 2 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut vysokomolekulyarnykh soyedineniy, Leningrad (Leningrad, Institute of High Molecular Compounds, AS USSR)

Card 2/3

Letters to the Editor.

SOV/76-32-6-34/46

The Quantitative Analysis of the Content of CH_2- and CH_3- Groups in Hydrocarbons According to Infrared Spectra

SUBMITTED: February 6, 1957

1. Hydrocarbon radicals--Quantitative analysis
2. Hydrocarbons--Spectrographic analysis

Card 3/3

5.3830

68948
SOV/81-59-24-88920

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 24, p 639 (USSR)

AUTHOR: Pokrovskiy, Ye.I.

TITLE: Changes in Infrared Spectra of Crystalline Polymers During Melting

PERIODICAL: Fiz. sb. L'vovsk. un-t, 1957, Nr 3 (8), pp 416 - 418

ABSTRACT: The infrared spectra were investigated of partially crystalline polytetrafluoroethylene (I), polytrifluorochloroethylene (II), polyethyleneterephthalate (III) and completely amorphous polystyrene (IV), polyisobutylene (V) and polymethylmethacrylate in the region 430 - 4,000 cm^{-1} within the 20 - 400°C temperature range. In the case of crystalline polymers an S-shaped temperature dependence of the intensity of some bands (for I at 640 cm^{-1}, for II at 657 cm^{-1}, for III at 791 cm^{-1}) was observed in the melting region. The degree of crystallinity of II and III calculated from these data corresponds to the results of the dilatometric measurements. The phenomena observed are connected with the reversible isomerization during melting of the crystalline polymers. In amorphous IV and V the intensities of several bands increase or decrease somewhat above the temperature of vitrification.

Card 1/1

A. Litmanovich

POKROVSKIY, Ye.I.

Analysis of α-methylstyrene-styrene copolymers based on the absorption of infrared bands in the are of 3 μ. Vysokom. soed. 1 no.5:738-739 My '59. (MIRA 12:10)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Styrene--Spectra)

7(3),24(7)
AUTHOR: Pokrovskiy, Ye. I.

SOV/48-23-10-7/39

TITLE: The Determination of the Intensities of the Absorption Bands of C-H Valence Oscillations in the Infrared Spectrum

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, pp 1189-1191 (USSR)

ABSTRACT: In order to determine the ramification of the polyethylene molecule and the structure of some polymers with different numbers of CH_2- and CH_3-groups the authors produced the infrared spectra of a number of normal paraffins, beginning from n-hexane to n-hexadecane within the range 3μ (cf. Fig 1). The absorption coefficients of these hydrocarbons in a CCl_4-solution were measured. For the purpose of analysis the band 2924 cm^{-1} (C-H oscillation in the CH_2 group) and the band 2957 cm^{-1} (C-H oscillation in CH_3) were used. The intensity of the first-mentioned band increased with an increase in the number of CH_2 groups, that of the latter decreased with increasing chain length

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because the relative number of CH_3-groups decreased per molecule. The absorption for a CH_2-group for 2924 cm^{-1} amounted to 154 and for 2957 cm^{-1} 25.7 l/Mol.cm. For a CH_3 group the corresponding values are 21.3 and 232 l/Mol.cm. The ratio of the K-values in the absorption maxima of the CH_2- and CH_3-groups was unchanged and amounted to 0.66 ± 0.01 . For the analysis of the copolymers obtained in the polymerization of α-methyl styrene with styrene, absorption spectra were produced both of the monomers and of pure polymers (Figs 2, 3), which differ considerably from each other within the range 3 μ. For analyses, the bands with 2850 cm^{-1} (polystyrene) and 2986 cm^{-1} (poly-α-methyl styrene) were found to be the most useful. The absorption coefficients of these two bands for polystyrene were determined as amounting to 39.1 and 10.0 l/Mol.cm and for poly-α-methylstyrene as 9.0 and 91.2 l/Mol.cm respectively. Five mixtures of

The Determination of the Intensities of the Absorption Bands of C-H Valence Oscillations in the Infrared Spectrum

poly-α-methylstyrene and polystyrene of the following polystyrene concentrations were produced: 11.8, 25.0, 53.1, 75.1 and 91.1% . A determination of concentration by using the absorption spectra gave the following values: 11.2, 24.3, 53.5, 77.9 and 91.6% . There are 3 figures and 1 Soviet reference.

24(7),7(3),5(4)

AUTHORS: Pokrovskiy, Ye. I., Vol'kenshteyn, M. V. SOV/48-23-10-14/39

TITLE: The Investigation of Isotactic Polymers by Means of Infrared Spectroscopy

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 10, pp 1208-1209 (USSR)

ABSTRACT: The authors investigated the infrared spectra of isotactic polypropylene (PP) and polystyrene (PS) in the range of 3000 - 400 cm^{-1}, by using the spectrometers of the type IKS-2 and IKS-11 with LiF-, NaCl- and KBr-prisms. In the case of PP the film thickness was $\sim 200\mu$, in that of PS it was $\sim 25\mu$. The spectra were recorded within the temperature range between room temperature and the melting point of the polymers. The absorption spectra of crystalline and melted isotactic PP in the range of 800 - 900 cm^{-1} differ neither from one another nor from the spectrum of atactic PP (Fig 1). In the absorption spectrum of crystalline PP the intense band varies at 992 cm^{-1}, the intensity of which depends on the crystallinity degree of PP (Fig 2). As the method for determination of the "amorphity"

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degree is not accurate enough at 790 cm^{-1} for the determination of the degree of crystallinity, the authors used the band at 992 cm^{-1} for this purpose. The percentage of the crystallinity of PP was measured by measuring the optical density of the band at 969 cm^{-1} (standard) and 992 cm^{-1}. 96% was obtained. In isotactic PS a number of bands in the crystalline state was found (Fig 3). The most intensive of them were at 775, 840, 916, 1315 and 1360 cm^{-1}. In the more long-wave range of the spectrum of atactic PS two bands were found at 560 and 540 cm^{-1}, in isotactic PS only one was found at 560 cm^{-1}. A solution of the PS resulted in no variation of band intensities. There are 3 figures and 2 Soviet references.

BOGOMOL'NYY, V. Ya.; YERUSALIMSKIY, B.L.; POKROVSKIY, Ye.I.

Free radical reactions in solutions. Part 18: Relative activity of CH_3, and $(CH_3)_3$ CO. radicals in the reaction of detachment of H-atom from hydrocarbons. Zhur.ob.khim. 31 no.8: 2675-2682 Ag '61. (MIRA 14:8)
(Radicals (Chemistry))

POKROVSKIY, Ye.I.

Determination of the composition of methacrylate copolymers by means of infrared spectroscopy. Vysokom. soed. 6 no.4: 642-646 Ap '64. (MIRA 17:6)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

POKROVSKIY, Ye.I.; FEDOROVA, Ye.F.

Quantitative determination of the stereoregularity of polystyrene by means of infrared spectroscopy. Vysokom. soed. 6 no.4:647-651 Ap '64. (MIRA 17:6)

1. Institut vysokomolekylyarnykh soyedineniy AN SSSR.

L 38585-65 EWT(m)/EPF(c)/EWP(j)/EWA(c) Pc-4/Pr-4 RM
ACCESSION NR: AP5010583 UR/0020/65/161/003/0617/0619

AUTHOR: Rudakov, A. P.; Bessonov, M. I.; Pokrovskiy, Ye. I.; Fedorova, Ye. F.; Koton, M. M. (Corresponding member AN SSSR)

TITLE: High-temperature isomeric conversions in polyimides

SOURCE: AN SSSR. Doklady, v. 161, no. 3, 1965, 617-619

TOPIC TAGS: polyimide, polymer, cross linking, thermal treatment

ABSTRACT: Pyromellitic dianhydride, biphenyltetracarboxylic dianhydride, and the dianhydride of an aliphatic tetracarboxylic acid [sic] were condensed with diaminodiphenyl ether and benzidine in dimethylformamide at 15C. The resulting solutions of a series of representative polyimides were used to form polyimide films which were then subjected to thermal treatment. Infrared, gravimetric, and dielectric measurement data indicated that dehydrocyclization (imidization) is essentially complete at 250C. However, additional thermal treatment at 300—400C results in a somewhat unexpected considerable increase in elasticity. Since any destructive thermal effects would decrease

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L 38585-65
ACCESSION NR: AP5010583

elasticity, and since crystallization is disproved by x-ray data, it was concluded that at higher temperatures cross-linking occurs, probably by opening of individual imide rings incorporated in the macromolecules and subsequent formation of imide cross-links between separate macromolecules. This is supported by attenuation of the 1780 cm^{-1} band associated with carbonyl groups in five-membered rings. Further support for cross-linking is provided by thermomechanical tests on the above films. Intermolecular isomerization of this type may be utilized to control the properties of other thermosetting plastics. Orig. art. has: 3 figures, 1 table, and 1 formula. [VS]

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute of Macromolecular compounds, Academy of Sciences, SSSR)

SUBMITTED: 05Nov64 ENCL: 00 SUB CODE: OC, TD

NO REF SOV: 000 OTHER: 005 ATD PRESS: 3227

Card 2/2

(A) L 13520-66 EWT(m)/EWP(j)/T RM

ACC NR: AP6001858 SOURCE CODE: UR/0190/65/007/012/2039/2047

AUTHORS: Koton, M. M.; Andreyeva, I. V.; Getmanchuk, Yu. P.; Madorskaya, L. Ya.; Pokrovskiy, Ya. I.; Kol'tsov, A. I.; Filatova, V. A.

ORG: Institute of High-Molecular Polymers AN SSSR (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

TITLE: Structure of methacrolein polymers, obtained in the presence of anionic catalysts. 3rd report in the series Polymerization of Acrolein and Its Derivatives

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 12, 1965, 2039-2047

TOPIC TAGS: polymerization, polymer structure, reaction mechanism, catalyst/ Nippon Bunko infrared spectrophotometer DS 301, GNM 3 nuclear magnetic resonance spectrometer

ABSTRACT: The structure of polymers obtained from methacrolein and α-ethylacrolein in the presence of sodium naphthalene and sodium trityl using the method described by M. M. Koton, I. V. Andreyeva, and Yu. P. Getmanchuk (Dokl. AN SSSR, 155, 836, 1964) was investigated. The structure analysis was performed by chemical means: oxime formation, hydrogenation, oxidation with perbenzoic acid, ozonization, as well as by physical means: infrared spectra, using Nippon-Bunko spectrophotometer DS-301, and NMR spectra, using instrument GNM-3. It was established that the rate of conversion of methacrolein and the structure of the obtained polymer are both functions of the polymerization temperature, as illustrated in Fig. 1. Mechanism of the polymerization

UDC: 678.01:53+678.744

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ACC NR: AP6001858

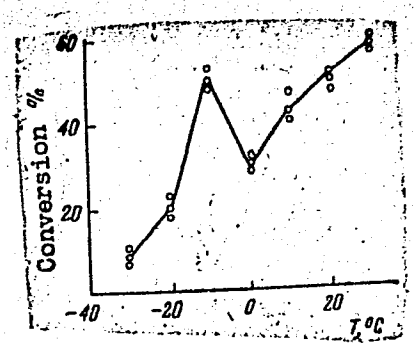
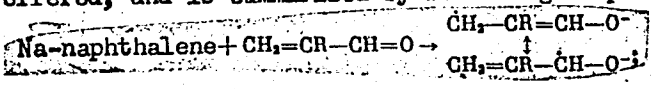
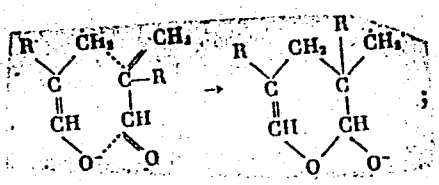


Fig. 1. Degree of methacrolein conversion to polymer within 8 hours as function of temperature. Polymerization conducted in THF in the presence of Na napthalene (1 mol %).

reaction is offered, and is summarized by following steps: 1) initiation



2) propagation



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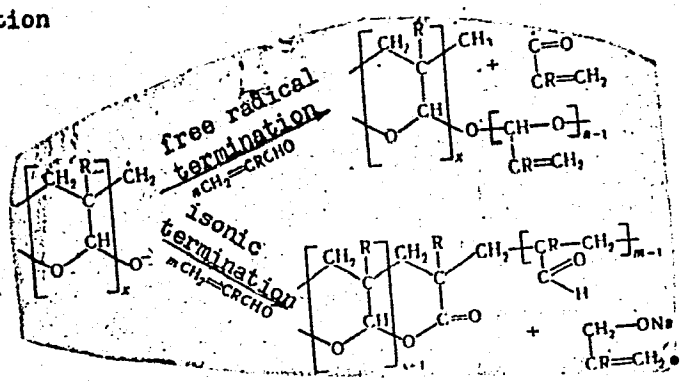
ACC NR: AP6001858

0

3) termination



At OC and above, the termination step occurs mainly along the ionic path. This mechanism explains the formation of the predominantly cyclic structures consisting of condensed tetrahydropyrane rings at temperatures below OC. Orig. art. has: 3 tables, 6 figures, 4 formulas, and 3 equations.

SUB CODE: 11, 07/ SUBM DATE: 01Dec64/ ORIG REF: 005/ OTH REF: 014

Card 3/3 dsR

L 07081-67 EWT(d)/EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/EM/GD
ACC NR: AT6026919 SOURCE CODE: UR/0000/66/000/000/0179/0187

AUTHOR: Pokrovskiy, Yu. I.; Vikhrov, V. I.; Perevezentsev, V. N.

ORG: None

TITLE: Unit for remote measurement of internal friction and modulus of elasticity of radioactive materials

SOURCE: AN SSSR. Institut metallurgii. Vnutrenneye treniye v metallakh i splavakh (Internal friction in metals and alloys). Moscow, Izd-vo Nauka, 1966, 179-187

TOPIC TAGS: internal friction, elastic modulus, shear modulus, electronic measurement, laboratory instrument, mechanical motion instrument, fatigue test, relaxation process, material deformation, radioactivity

ABSTRACT: A unit for remote measurement of internal friction and modulus of elasticity is described. This unit received author certificate application no. 823088/26-25, 5 Mar 63. The unit can measure the internal friction of materials from 5×10^{-2} down to 5×10^{-5} in the range of 60-600 cycles for bending and torsion vibrations under conditions of low (-196°C) room and elevated temperatures (up to 700°C). Modulus of elasticity and shear modulus can be measured on this unit and fatigue testing can be carried out. Both vibration damping and resonance methods can be used. A simplified projection of voltages at various points in the circuit, and a principal schematic diagram of the unit are included, together with a brief

Card 1/2

L 44169-65 EPF(c)/EWP(j)/EWA(c)/EWT(m) Po-4/Pr-4 RM

ACCESSION NR: AP5005599 S/0190/65/007/002/0305/0307

AUTHORS: Adrova, N. A.; Koton, M. M.; Dubnova, A. M.; Moskvina, Ye. M.; Pokrovskiy, Ye. I.; Fedorova, Ye. F.

TITLE: Synthesis and properties of polybenzimidazoles containing aliphatic units in the main chain

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 2, 1965, 305-307

TOPIC TAGS: polymer, polybenzimidazole, polymer synthesis, polymer property, polycondensation

ABSTRACT: A number of polyalkylene dibenzimidazoles were synthesized by polycondensation of 3.3-diaminobenzidine with the phenyl esters of a number of aliphatic dicarboxylic acids. Equimolar mixtures of the reactants were heated in an argon flow for 2-3 hours at 250-270C and in a vacuum for an additional 0.5-1 hours (0.03 mm at 270C). The characteristic viscosity of the products was determined in 0.1-0.2% N solutions of formic acid, and the heat stability was determined by heating for one hour each at 300, 400 and 500C in air. The polycondensation occurs according to the reaction

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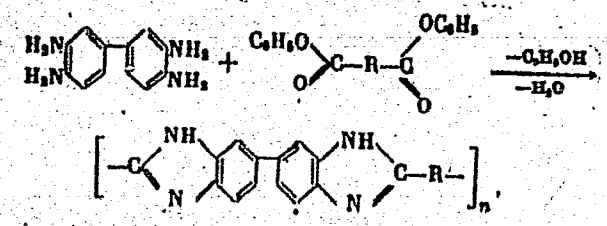
L 44169-65

ACCESSION NR: AP5005599



$R = (CH_2)_n$; $n = 0, 1, 2, 3, 4, 8$; C_6H_4.

yielding a yellowish-brown powder, soluble in formic acid and thermally stable in air and nitrogen. Polymers based on the following dicarboxyl acids were obtained: oxalic, malonic, succinic, glutaric, adipic and sebacic. Their characteristic viscosities were 0.3, 0.3, 1.2, 2.15, 3.3, and 1.5-13.0 respectively. Their weight loss at 500C was 98.5, 66.34, 71.38, 81.10, 73.94, 56.8, and 23.1% respectively. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy, AN SSSR (Institute of High Molecular Weight Compounds, AN SSSR)

SUBMITTED: 25Apr64 ENCL: 00 SUB CODE: OC

NO REF SOV: 001 OTHER: 002

Card 2/2

L 55147-65 EWT(1)/EWT(m)/EWG(m)/EWP(j)/EEC(t)/T/EED(b)-3 Pc-4 IJP(c) RWH/RM

ACCESSION NR: AR5012261 UR/0058/65/000/003/D035/D036

SOURCE: Ref. zh. Fizika, Abs. 3D265

AUTHOR: Belen'kiy, B. G.; Kalnin'sh, K. K.; Pokrovskiy, Ye. I.

TITLE: Infrared spectroscopy of aqueous solutions

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 257-269

TOPIC TAGS: IR spectroscopy, aqueous solution, ion exchange resin

TRANSLATION: The infrared spectra of complexes of KU-2 ion exchange resin and amino acid in ordinary and heavy water and in tablet form was studied. It was determined that hydrogen bonds are formed between the water and the sulfo group of the resins in the nondissociated form and that there is a change in the spectrum with the dissociation of the sulfo group. Alanin is transformed in the ion exchange resin into a cation with a nondissociated carbonyl group. The infrared spectra in ordinary and heavy water at various pH's was used to determine the character of the dissociating groups of amino acids and certain antibiotics (tetracyclines and nistatine).

Card 1/1

SUB CODE: OC, OP ENCL: 00

VIKSNIN, Yu.S.; POKROVSKIY, Ye.N. (Riga)

Unusual sign of a gunshot point-blank. Sud.-med.ekapert. 5 no.4:52 O-D '62. (MIRA 15:11)

(FORENSIC BALLISTICS)

POKROVSKIY, Yevgeniy Nikolayevich

Magnetic amplifier using transistors with a.c. feed of the operative circiut. Izv. vys. ucheb. zav.; elektromekh. 6 no.3:324-332 '63.
(MIRA 16:5)

1. Starshiy inzhener kafedry sistemy avtomaticheskogo upravleniya Leningradskogo elektrotekhnicheskogo instituta.
(Magnetic amplifiers) (Transistor amplifiers)

ZAL'TSBERG, L.; POKROVSKIY, Yu., kapitan-leytenant

Accuracy in determining the speed of a vessel and the lag coefficient with help of radar stations and ways to increase it. Mor.flot. 20 no.8:13-14 Ag '60. (MIRA 13:8)

1. Nachal'nik sudovoditel'skogo otdeleniya Liyepayskogo morekhodnogo uchilishcha (for Zal'tsberg).
(Ship propulsion)
(Radar in navigation)

PROKHOROV, Yu.D.; ROSHCHIN, I.V.; SLEPAK, N.I.

Study of the thermal insulating properties of clothing for miners in open pits of the Far North. Gig. i san. 26 no.6:39-46 Je '61. (MIRA 15:5)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta gigiyeny imeni F.F.Erismana Ministerstva zdravookhraneniya RSFSR.
(NORILSK--MINES AND MINERAL RESOURCES--HYGIENIC ASPECTS)
(CLOTHING, COLD WEATHER)

PROKHOROV, Yu.D.; ROGOV, A.A.

Pathohistological and histochemical changes in the organs of rabbits under the prolonged action of carbon monoxide, sulfur dioxide and their combination. Gig. i san. 24 no.6:22-26 Je '59. (MIRA 12:8)

1. Iz kafedry obshchey gigiyeny I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova i TSentral'noy nauchno-issledovatel'skoy laboratorii imeni prof.S.I.Chechulina.

(SULFUR, pois.
dioxide, histochem. & histopathol. eff. in organs of rabbits, with & without carbon monoxide pois. (Rus))
(CARBON MONOXIDE, pois.
exper., histochem. & histopathol. eff. in organs of rabbits, with & without sulfur dioxide pois. (Rus))

L 8158-66 EPF(n)-2/EWT(d)/EWT(m)/EWP(z)/EWP(h)/T/EWA(d)/EWP(w)/EWI(t) IJP(c)
ACC NR: AT5023801 EM/GG/MJW/JD/HW/GS SOURCE CODE: UR/0000/62/000/000/0219/0234

AUTHOR: Konobeyevskiy, S. T. (Corresponding member AN SSSR); Pravdyuk, N. F.; Pokrovskiy, Yu. I.; Vikhrov, V. I.

ORG: none

TITLE: The effect of neutron irradiation on the internal friction of metals

SOURCE: Soveshchaniye po probleme Deystviye yadernykh izlucheniy na materialy. Moscow, 1960. Deystviye yadernykh izlucheniy na materialy (The effect of nuclear radiation on materials); doklady soveshchaniya. Moscow, Izd-vo AN SSSR, 1962, 219-234

TOPIC TAGS: copper, aluminum, magnesium, chromium steel, nickel containing steel, metal internal friction, metal fatigue, neutron irradiation, irradiation effect

ABSTRACT: The internal friction (1/Q) and the normal elasticity modulus have been investigated in solution-heat-treated copper, aluminum, and magnesium prior to and after irradiation at 80C with an integrated flux of 2.0×10^{16}—5.0×10^{20} thermal n/cm^2 (the number of fast neutrons with an energy of more than 1 Mev was 35%). The 1/Q was measured at a stress of 2—20,000 g/mm^2. The plotted internal friction-strain amplitude curves showed the existence of a critical strain (σ_{cr}) under which the 1/Q begins to be affected by the applied stress. The 1/Q and σ_{cr} were found to be very sensitive to irradiation (see Fig. 1.). For example, the σ_{cr} for irradiated copper increased 280 times and the minimum value of 1/Q decreased by two times compared with the initial value before irradiation. The changes in the value of 1/Q and

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ACC NR: AT5023801

σ_{cr} with irradiation doses equal to or less than 10^{17} n/cm^2 are caused by the interaction of dislocations and point defects which resulted from elastic scattering of neutrons. In the case of plastic deformation of up to 27%, the point defects resulted from interaction between dislocations, and the increase in the value of 1/Q was considerably smaller. In distilled magnesium subjected to fatigue with a cyclic stress of various amplitude before irradiation with an integrated flux of 10^{19} n/cm^2 (thermal neutrons and about 10% fast neutrons with an energy above 1 Mev), the value of σ_{cr} was found to increase from the initial 5 g/mm^2 to 100 g/mm^2 after irradiation. In fatigue testing under a cyclic stress of 1600—4500 g/mm^2, distilled magnesium irradiated with an integrated flux of 10^{19} n/mm^2 (thermal) had an endurance limit 10% higher than unirradiated magnesium. The effect of irradiation on the natural vibration frequency of specimens (the square of which determines the normal elasticity modulus) was investigated on irradiated copper and unirradiated 1Kh18N9T [AISI 321] stainless steel. The observed irradiation-induced behavior of the normal elasticity modulus can be explained by a manifestation of both the elastic and "nonelastic" properties of the metal, depending on the magnitude of the stress applied in dynamic measurement of the modulus. The "nonelastic" properties of the metal can be caused by migration of dislocations, while pure elastic properties manifest themselves only in the region of stresses $\sigma \leq \sigma_{cr}$.

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L 3158-66

ACC NR: AT5023801

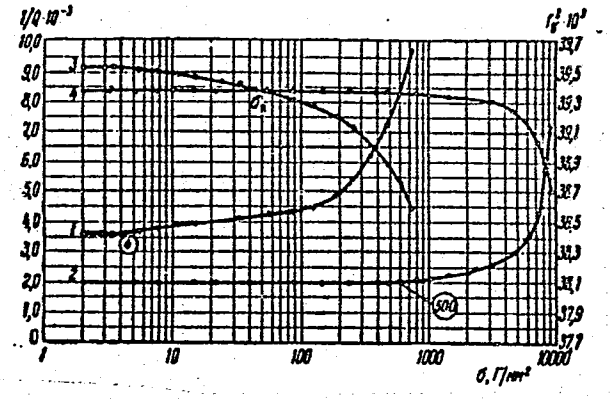

Fig. 1. Dependence of the internal friction and the square of natural vibration frequency of copper before and after irradiation on stress amplitude.

1 - Internal friction before irradiation; 2 - after irradiation; 3 - square of the natural frequency before irradiation; 4 - after irradiation.

Hence, the irradiation-induced changes in the normal elasticity modulus can be studied only at the above stresses. Orig. art. has: 16 figures. [MS]

SUB CODE: MM,SS/ SUBM DATE: 18Aug62/ ORIG REF: 002/ OTH REF: 001/

jw

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L 9238-66 EWT(d)/EWT(l)/EWT(m)/EWP(w)/EPF(n)-2/EWP(v)/T/EWP(t)/EWP(k)/EWP(b)/
ACC NR: AT5023802 EWA(h)/EWA(c)/ETC(m) SOURCE CODE: UR/0000/62/000/000/0235/0241
JD/WW/EM/GG/GS

AUTHOR: Pravdyuk, N. F.; Pokrovskiy, Yu. I.; Vikhrov, V. I.

ORG: none

TITLE: Effect of neutron irradiation on the internal friction of zinc monocrystals and polycrystals

SOURCE: Soveshchaniye po probleme Deystviye yadernykh izlucheniy na materialy. Moscow, 1960. Deystviye yadernykh izlucheniy na materialy (The effect of nuclear radiation on materials); doklady soveshchaniya. Moscow, Izd-vo AN SSSR, 1962, 235-241

TOPIC TAGS: irradiation, neutron irradiation, zinc single crystal, zinc polycrystal, internal friction

ABSTRACT: Zinc single crystals and polycrystals with various base plane angles and with orientation angles of 15, 46, 66, 76, 86, and 88° were irradiated with integrated fluxes of 3×10^{18} or 1.5×10^{19} n/cm^2, and the effect of irradiation on the internal friction was investigated. Results of investigations showing changes of internal friction, which are produced by the maximum strain amplitude (σ_{cr}), at which the internal friction begins to depend upon it, in zinc single crystals and polycrystals with or without applying neutron irradiation are shown in Figs. 1—6.

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L 9238-66
ACC NR: AT5023802

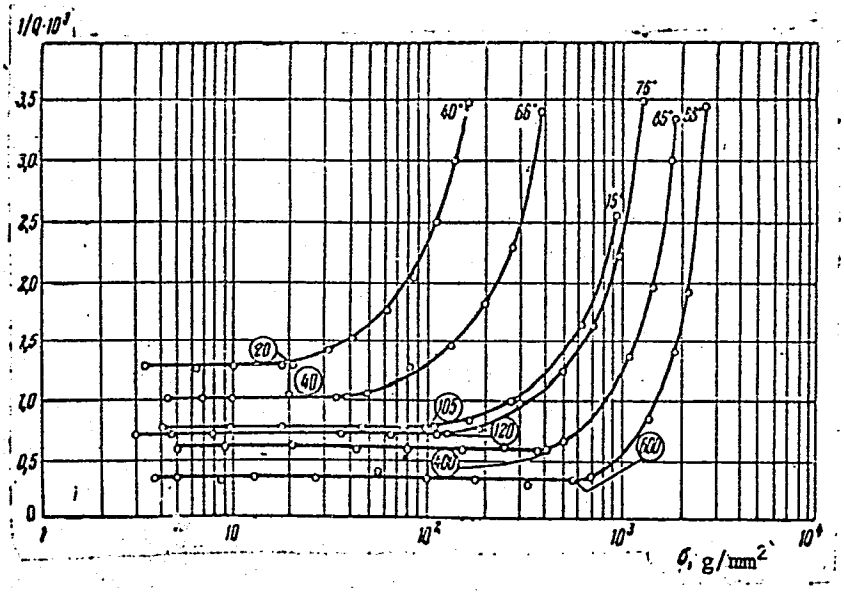

Fig. 1. Internal friction change induced by strain amplitude of unirradiated zinc single crystals with orientation angles of 15, 40, 66, 76, 86, and 88° at base plane 0001 (the values of σ_{cr} are shown on the curves)

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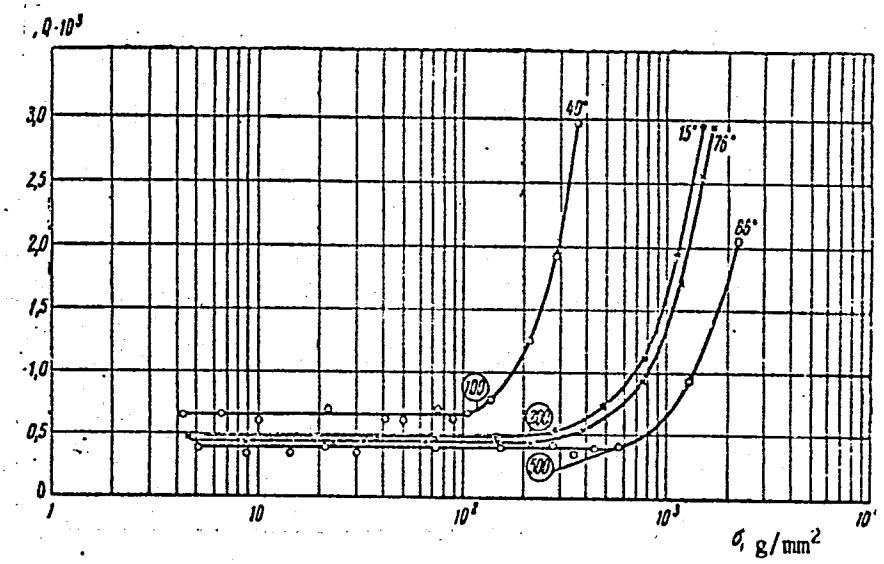

Fig. 2. Internal friction change induced by strain amplitude of zinc single crystals with orientation angles of 15, 40, 76, and 86° at base plane 000, which were irradiated with a flux of 3 x 10^{18} n/cm^2 (the values of σ_{cr} are shown on the curves)

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L 9238-66

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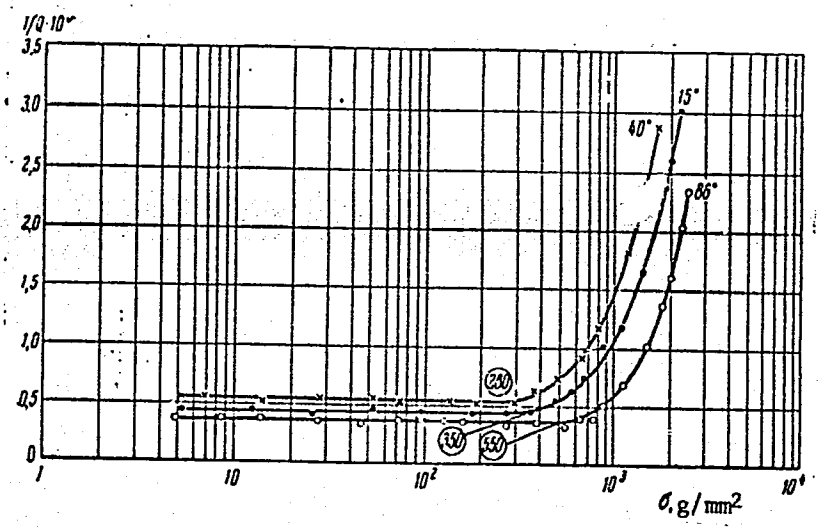

Fig. 3. Internal friction change induced by strain amplitude of zinc single crystals with orientation angles of 15, 40, and 86° at base plane 0001, which were repeatedly irradiated with a flux up to 1.5 x 10^{19} n/cm^2 (the values of σ_{cr} are shown on the curves)

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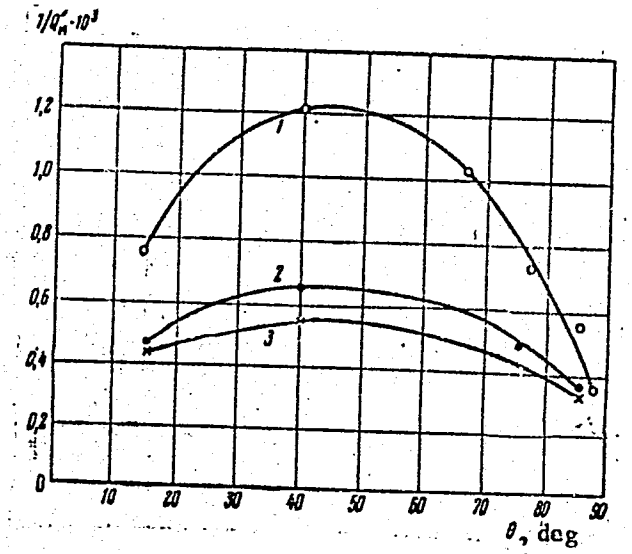

Fig. 4. Minimum internal friction change of zinc single crystals, which depends upon orientation angle at base plane 0001

1 - Before irradiation; 2 - after irradiation with a flux of 3×10^{18} n/cm^2; 3 - after repeated irradiation with fluxes up to 1.5×10^{19} n/cm^2.

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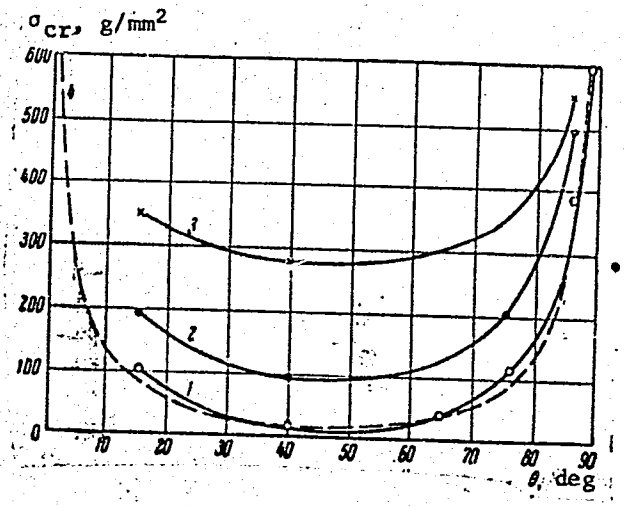

Fig. 5. Change in σ_{cr} before and after irradiation of zinc single crystals, which depends upon orientation angle at base plane 0001

1 - Before irradiation (experimental curve); 2 - after irradiation with a flux of 3×10^{18} n/cm^2; 3 - after repeated irradiation with fluxes up to 1.5×10^{19} n/cm^2; 4 - before irradiation (theoretical curve).

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ACC NR: AT5023802

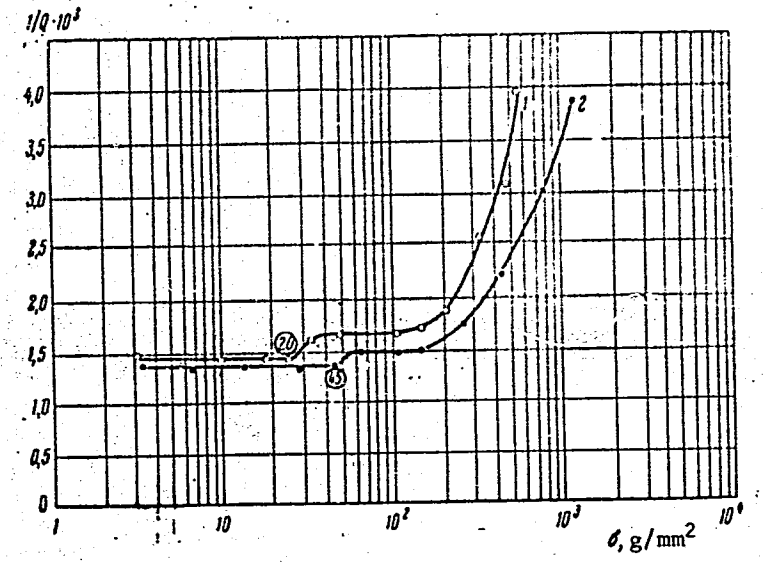

Fig. 6. Internal friction change induced by strain amplitude before and after irradiation of zinc polycrystal

1 - Before irradiation (σ_{cr} = 26 g/mm^2); 2 - after irradiation with flux of 3 x 10^{18} n/cm^2 (σ_{cr} = 45 g/mm^2).

Orig. art. has: 7 figures and 3 formulas. [ND]

SUB CODE: 20/ SUBM DATE: 18Aug62/ ORIG REF: 001/

Card 7/7

KONOBEYEVSKIY, S.T.; PRAVDYUK, N.F.; POKROVSKIY, Yu.I.; VIKHROV, V.I.

[Effect of neutron irradiation on internal friction in zinc monocrystals and polycrystals] Vliianie neitronnogo oblucheniia na vnutrennee trenie mono- i polikristallov tsinka. Moskva, In-t atomnoi energii AN SSSR, 1960. 15 p. (MIRA 17:1)

Pokrovskiy, Yu. I.

21(4) PHASE I BOOK EXPLOITATION SOV/2714

International Conference on the Peaceful Uses of Atomic Energy. 2nd, Geneva, 1958

Doklady sovetskikh uchenykh; yadernoye goryucheye i reaktornyye metally. (Reports of Soviet Scientists; Nuclear Fuel and Reactor Metals) Moscow, Atomizdat, 1959. 670 p. (Series: Its: Trudy, vol. 3. 8,000 copies printed.

Ed. (Title page): A.A. Bochvar, Academician, A.P. Vinogradov, Academician, V.S. Yemel'yanov, Corresponding Member, USSR Academy of Sciences, and A.P. Zefirov, Doctor of Technical Sciences; Ed. (Inside book): V.V. Fareverner and G.M. Pchelintseva; Tech. Ed.: E.I. Mazel'.

PURPOSE: This volume is intended for scientists, engineers, physicians, and biologists working in the production and peaceful application of atomic energy; for professors and students of schools of higher technical education where the subject is taught; and for people interested in atomic science and technology.

COVERAGE: This is volume 3 of a 6-volume set of reports on atomic energy, presented by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy, held in Geneva from September 1 to 13, 1958. Volume 3 consists of two parts. The first part, edited by A.I. Zubov, is devoted to geology, prospecting, concentration and processing of nuclear source material. The second part, edited by G.L. Zverev, includes 27 reports on metallurgy, metallography, processing technology of nuclear fuels and reactor metals, and neutron irradiation effects on metals. The titles of the individual papers in most cases correspond word for word with those in the official English language edition on the Conference proceedings. See SOV/2081 for the titles of the other volumes of the set.

Konobeyevskiy, S.T., K.P. Dubrovin, B.M. Levitskiy, L.D. Panteleyev, and N.F. Pravdyuk. Some Physico-chemical Processes occuring in Fissionable Materials Under Irradiation (Report No. 2192)

Pravdyuk, N.F., S.T. Konobeyevskiy, A.D. Amayev, and Yu.I. Pokrovskiy. The Effect of Neutron Irradiation on the Mechanical Properties of Structural Materials (Report No. 2052) 610

Sinel'nikov, K.D., V.Ye. Ivanov, and V.F. Zelenskiy. Magnesium-Beryllium Alloy as Structural Materials for Nuclear Reactors (Report No. 2153) 623

Shatalov, V.V., and V.A. Nikitina. Corrosion Behavior of Structural Metals in Ionized Air (Report No. 2042) 636

Lyashenko, V.S., V.V. Zotov, V.Ye. Andreyev, M.D. Abramovich, and V.A. Ivanov. Inquiry into the Corrosion Resistance of Certain Materials in Sodium and Lithium (Report No. 2194) 642

Card 10/11

S/089/61/010/004/003/027
B102/B212

21.6200

AUTHORS: Pravdyuk, N. F., Pokrovskiy, Yu. I., Vikhrov, V. I.

TITLE: Effect of neutron bombardment on the internal friction of monocrystalline and polycrystalline zinc

PERIODICAL: Atomnaya energiya, v. 10, no. 4, 1961, 347-352

TEXT: N. F. Pravdyuk has already reported in a lecture (Second Atomic Conference at Geneva 1958) about investigations of internal friction and of the critical amplitude of the maximum tension σ_{cr} before and after neutron bombardment of metals, and also of the influence of the orientation of the basal plane (0001) to the longitudinal axis of monocrystalline zinc. The method and equipment used have also been described there. This paper publishes additional results which have been obtained with monocrystalline and polycrystalline zinc. (σ_{cr} is that value of the maximum tension amplitude, at which internal friction starts to be a function of the tension amplitude). The monocrystalline specimens showed the following orientations of the (0001) planes to the longitudinal axis: 15, 40, 66, 76, 86, and 88°;

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Effect of ...

specimens with 15, 40, 76, and 86° orientation have been exposed to neutron radiation. The internal friction has been measured at transverse oscillations (300 cps) before and after neutron bombardments having integral fluxes of $3 \cdot 10^{18}$ and $1.5 \cdot 10^{19}$ n/cm^2 and at a ratio of fast to thermal neutrons of 1 : 10. The amplitude of the maximum tension has been calculated from the oscillation amplitude. The results are represented graphically. Fig. 1 shows the change of internal friction as a function of the tension amplitude of non-irradiated monocrystalline zinc at angles θ given above the curves; the figures given below are the values of σ_{cr}. Fig. 2 shows the same for neutron-bombarded ($3 \cdot 10^{18}$ n/cm^2) monocrystals. Fig. 4 shows the change of the minimum internal friction of monocrystalline zinc as a function of the angle θ, and Fig. 5 shows the functions $\sigma_{cr}(\theta)$ - both for monocrystals before and after bombardment. The following numerical values have been obtained:

σ_{cr}	15°	40°	66°	76°	86°	88°
before bombardment	105	20	40	120	400	600
after bombardment ($3 \cdot 10^{18}$ n/cm^2)	200	100	-	200	500	-
after bombardment ($1.5 \cdot 10^{19}$ n/cm^2)	350	280	-	-	550	-

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Effect of ...

The theoretical value is given as $\sigma_{cr} = 2\tau_{cr}/\sin 2\theta$, where $\tau_{cr} = \sigma_{cr}\cos\varphi\sin\theta$; τ denotes the tangential stress given by $(P/A)\cos\varphi\sin\theta$; and $P/A = \sigma_{cr}$. The notations are shown in Fig. 6: θ denotes the angle between the line of application of the force and the glide plane; φ represents the angle between the direction mm of a possible displacement in the glide plane and the axis of the specimen; nn denotes the normal on the glide plane. It has been found that the value of σ for bombarded specimens may be connected to the start of shift of dislocations along the basal plane. Fig. 7 shows $1/Q = f(\sigma)$ for non-irradiated (1) and irradiated (2) polycrystalline zinc; the irradiation has been done with $3\cdot10^{18}$ n/cm^2. The experimental curves are discussed in detail. One may imagine that the curves $1/Q = f(\sigma)$ consist of three sections: 1) $\sigma < \sigma_{cr}$; 2) $\sigma > \sigma_{cr}$; 3) $\sigma \gg \sigma_{cr}$. The first two sections are the parts with reproducible internal friction, and the third one is that with irreproducible friction. The authors thank S. T. Konobeyevskiy for discussions. There are 7 figures, 1 table and 1 Soviet-bloc reference.

SUBMITTED: November 14, 1960
Card 3/9

POKROVSKIY, YU. I.

PHASE I BOOK EXPLOITATION SOV/6176

Konobeyevskiy, S. T., Corresponding Member, Academy of Sciences USSR, Resp. Ed.

Deystviye vadernykh izlucheniy na materialy (The Effect of Nuclear Radiation on Materials). Moscow, Izd-vo AN SSSR, 1962. 383 p. Errata slip inserted. 4000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye tekhnicheskikh nauk; Otdeleniye fiziko-matematicheskikh nauk.

Resp. Ed.: S. T. Konobeyevskiy; Deputy Resp. Ed.: S. A. Adasinskiy; Editorial Board: P. L. Gruzin, G. V. Kurdyumov, B. M. Levitskiy, V. S. Lyashenko (Deceased), Yu. A. Martynyuk, Yu. I. Pokrovskiy, and N. F. Pravdyuk; Ed. of Publishing House: M. G. Makarenko; Tech. Eds: T. V. Polyakova and I. N. Dorokhina.

Card 1/14

The Effect of Nuclear Radiation (Cont.)

PURPOSE: This book is intended for personnel concerned with nuclear materials.

COVERAGE: This is a collection of papers presented at the Moscow Conference on the Effect of Nuclear Radiation on Materials, held December 6-10, 1960. The material reflects certain trends in the work being conducted in the Soviet scientific research orginization. Some of the papers are devoted to the experimental study of the effect of neutron irradiation on reactor materials (steel, ferrous alloys, molybdenum, avial, graphite, and nichromes). Others deal with the theory of neutron irradiation effects (physico-chemical transformations, relaxation of internal stresses, internal friction) and changes in the structure and properties of various crystals. Special attention is given to the effect of intense γ-radiation on the electrical, magnetic, and optical properties of metals, dielectrics, and semiconductors.

The Effects of Nuclear Radiation (Cont.)

Card 9/14

KONOBEYEVSKIY, S.T., otv. red.; ADASINSKIY, S.A., zam. otv. red.; GRUZIN, P.L., red.; KURDYUMOV, G.V., red.; LEVITSKIY, B.M., red.; LYASHENKO, V.S. [deceased], red.; MARTYNYUK, Yu.A., red.; POKROVSKIY, Yu.I., red.p PRAVDYUK, N.F., red.; MAKARENKO, M.G., red. izd-va; POLYAKOVA, T.V., red. izd-va; DOROKHINA, I.N., tekhn. red.

[Effect of nuclear radiation on materials; reports]Deistvie iadernykh izluchenii na materialy; doklady. Moskva, Izd-vo Akad. nauk SSSR, 1962. 383 p. (MIRA 15:10)

1. Soveshchaniye po probleme "Deystviye iadernykh izlucheniy na materialy," Moscow, 1960.2. Chlen-korrespondent Akademii nauk SSSR (for Konobeyevskiy).
(Materials, Effect of radiation on)

L 09302-67 EWT(m)/EWP(w)/EWT(t)/ETI IJP(c) JD/WW/JW/JG/GD

ACC NR: AT6026912 (A) SOURCE CODE: UR/0000/66/000/000/0076/0082

58
55

AUTHOR: Pokrovskiy, Yu. I.; Vikhrov, V. I.; Perevezentsev, V. N.

ORG: None

TITLE: Study of some radiation defects in metals by measuring internal friction and modulus of elasticity

SOURCE: AN SSSR. Institut metallurgii. Vnutrenneye treniye v metallakh i splavakh (Internal friction in metals and alloys). Moscow, Izd-vo Nauka, 1966, 76-82

TOPIC TAGS: metal analysis, internal friction, elastic modulus, radiation damage, irradiation, nuclear reactor core / RFT reactor core, IRT-1000 reactor core

ABSTRACT: Samples of pure (99.98%) copper, molybdenum and tungsten were irradiated in the operating channel of an RFT reactor core at a flux of 10^{20} neutron/cm^2 and in the channel outside an IRT-1000 reactor core at a flux of 10^{14} neutron/cm^2. Internal friction (Q^{-1}) was measured between stresses of 1-1,000 G/mm^2 with maximum stress amplitude (σ) calculated according to the amplitude of vibrations; change of modulus of elasticity (E), associated with change of Q^{-1} to σ, was studied with respect to change of natural frequency vibrations squared (f_0^2) of sample in relation to σ. For copper, σ_{crit} rose 100 times after irradiation at 10^{20} neutron/cm^2 and Q^{-1} decreased by about 40% with respect to its pre-irradiation values. Changes in

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Q^{-1} and σ_{crit} are explained by reaction of dislocations with spot defects at low neutron dosages, and reaction of dislocations with more complex defects (such as vacancy complexes) at high neutron dosages. This behavior differs from that of Mo and W in that Q^{-1}_{min} for Cu at a flux of 10^{20} neutron/cm^2 decreases while Q^{-1} for both Mo and W increases because these two metals have "free" (unattached to dislocations) spot defects which are absent in Cu. The increase of σ_{crit} for Mo and W may signify that dislocations, such as in Cu, are locked in place by radiation defects. A small increase in σ_{crit} for these metals is associated with the fact that many of the defects formed remain in the lattice because of low mobility of radiation defects in these metals in comparison with the same mobility in copper. Examination of change of modulus of elasticity for the metals under scrutiny showed that neutron irradiation may cause an increase or decrease in elastic modulus (E) for copper in relation to the magnitude of the integrated flux. This E for copper increases with small doses and decreases for large doses. Explanations for changes in modulus of elasticity are quite similar to those for changes in internal friction. Low temperatures, and other forms of radiation (gamma-rays, electrons), can be used to study spot defects by the internal friction method. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 11, 18/SUBM DATE: 02 Apr 66/ORIG REF: 003/OTH REF: 002

nuclear metallurgy

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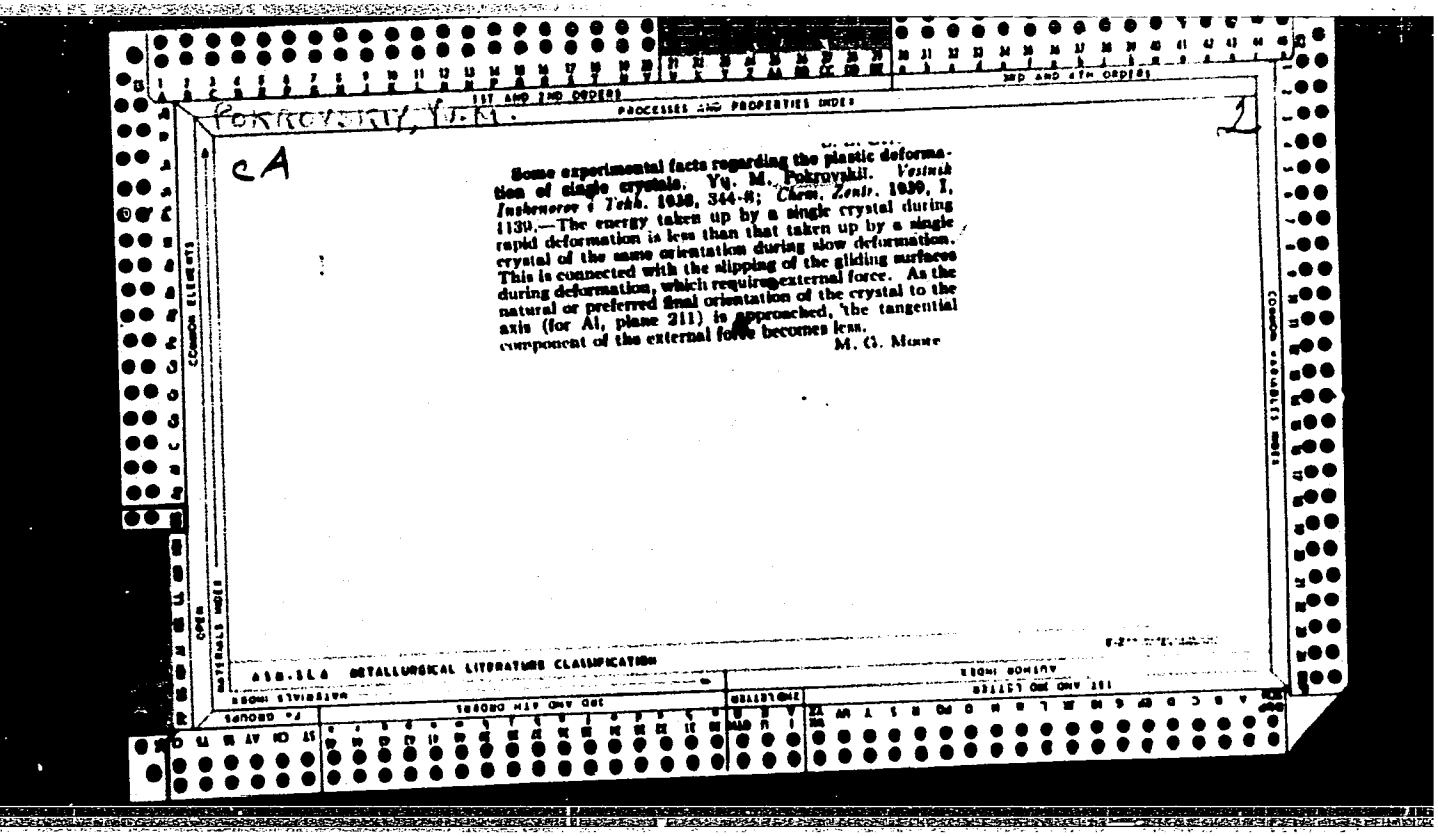

POKROVSKIY, Yu. M.

CA

Some experimental facts regarding the plastic deformation of single crystals. Yu. M. Pokrovskii. *Vestnik Inzhenerov i Tekh.* 1939, 344-8; *Chem. Zentr.* 1939, I, 1139.—The energy taken up by a single crystal during rapid deformation is less than that taken up by a single crystal of the same orientation during slow deformation. This is connected with the slipping of the gliding surfaces during deformation, which requires external force. As the natural or preferred final orientation of the crystal to the axis (for Al, plane 211) is approached, the tangential component of the external force becomes less.

M. G. Moore

POKROVSKIY, YU. M .

Russia - the homeland of electrical engineering. Moskva, Gos. izd-vo kul'turno-prosvetitel'noi lit-ry, 1951. 37 p. (V pomoshch' lektoru) (51-34893)

TK85.P6

POKROVSKIY, Yu. M.

KOSTOMAROV, V.M.; POKROVSKIY, Yu.M., kandidat tekhnicheskikh nauk, retsenzent; KOMAROV, L.P., inzhener, redaktor; STUPIN, A.K., redaktor izdatel'stva; UVAROVA, A.F., tekhnicheskiy redaktor.

[Activities of the Russian Engineering Society in promoting machinery manufacture] Iz deiatel'nosti Russkogo tekhnicheskogo obshchestva v oblasti mashinostroeniia. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 177 p. (MLRA 10:7)
Mechanical engineering--History)

POKROVSKIY, Yu.M.

Sidney Gilchrist Thomas (1850-1885) and the importance of the Thomas process in metallurgy. Vop.ist.est.i tekh. no.10:141-144 '60. (MIRA 14:3)
(Thomas, Sidney Gilchrist, 1850-1885) (Refractory materials)

Name: POKROVSKIY, Yu. N.

Wrote an article on transmission of high frequencies through rubber rather than metal wire. Developed by American telephone companies, this wire is made entirely of insulated material with a high dielectric constant. Mention was made of the future use of this wire in microwaves, ultra-high frequencies, etc.

REF: R. F. #20, p.44, 1938

POKROVSKIY, YU. N.

Pokrovskiy, Yu. N. — "Preliminarily Stressed Reinforced Concrete Beams with a Fascicular Armature (in Industrial and Civilian Construction)." Min Higher Education USSR, Leningrad Order of Labor Red Banner Engineering Construction Inst, Chair of Reinforced Concrete Constructions, Leningrad, 1955 (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis', No 24, 11 June 1955, Moscow, Pages 91-104

PRAVDYUK, N.F.; POKROVSKIY, Yu.N.; PLATONOV, P.A.

Conference on the Effect of Radiation on Materials. Atom.energ. 13 no.6:608-609 D '62. (MIRA 15:12)
(Materials, Effect of radiation on—Congresses)

L 52312-65 EPF(n)-2/EPR/EWP(k)/EWP(z)/EWT(d)/EWT(l)/EWT(m)/EWP(h)/EWP(i)/T/EWP(b)/EPA(bb)-2/EWA(d)/EWP(l)/EWP(v)/EWP(t) Pf-4/Ps-4/Pu-4/Pz-6 AT/WW/JD/MJW

ACCESSION NR: AP5011777 UR/0096/65/000/005/0091/0094

AUTHORS: Subbotin, V. I. (Doctor of technical sciences); Krivtsov, V. A. (Engineer); Pokrovskiy, Yu. N. (Engineer); Ibragimov, M. Kh. (Candidate of technical sciences); Kharitonov, N. P. (Candidate of technical sciences)

TITLE: Miniature thermocouples for the measurement of temperatures in reactors of the first atomic electric station

SOURCE: Teploenergetika, no. 5, 1965, 91-94

TOPIC TAGS: thermocouple, reactor, temperature measurement, nuclear power plant, copper, nickel, magnesium oxide / 1Kh18N9T steel

ABSTRACT: After a study of experimental data, the authors give recommendations for the optimal choice of microthermocouples to be used in atomic power plants. For temperatures up to 150C copper-constantan thermocouples of diameters 0.05-0.15 mm may be used. At 100C, their emf is about 3.90-4.28 mv. For temperatures up to 550C, good results are obtained by the use of chromel-coppel thermocouples with diameters from 0.1-0.5 mm, having an emf of 6.5-7.0 mv at 100C. For higher temperatures (up to 900C) chromel-alumel thermocouples 0.1-0.5 mm in diameter may be used. These have an emf of about 3.9-4.2 mv at 100C. The coating for

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